

628186

ATTACHMENT

# CALCULATION OF SPECIFIC ACTIVITY OF $^{90}\text{Y}$ LABELED COMPOUND (5, 650, 134, EXAMPLE 11)

0.16 mCi  $^{90}\text{Y}$  ADDED TO 11  $\mu\text{L}$  OF 9  $\mu\text{M}$   
CHELATING PEPTIDE (COMPOUND OF EX. 3).

ASSUME M.W. OF COMPOUND IS CA. 2000 g.

THE NO. OF MOLES OF COMPOUND PRESENT IN  
11  $\mu\text{L}$  OF A 9  $\mu\text{M}$  SOLUTION IS:

$$\frac{11 \mu\text{L}}{10^6 \mu\text{L/L}} \times 9 \times 10^{-6} \text{ mol/L} =$$

$$\underbrace{99}_{\text{ROUND OFF } 10^2} \times \underbrace{10^{-6} \times 10^{-6}}_{\times 10^{-12}} \text{ mol} =$$

$$= 10^{-10} \text{ mols OF COMPOUND}$$

TO CONVERT TO GRAMS OF WEIGHT OF COMPOUND,  
ASSUMING 2000 g.m.w., ONE HAS

$$10^{-10} \text{ mol} \times 2000 \text{ g/mol} =$$

$$10^{-10} \times 2 \times 10^3 = 2 \times 10^{-7} \text{ g}$$

$$= 2 \times 10^{-4} \text{ mg}$$

SPECIFIC ACTIVITY IS THEN:

$$\frac{0.16 \text{ mCi}}{2 \times 10^{-4} \text{ mg}} = \frac{16 \times 10^{-2} \text{ mCi}}{2 \times 10^{-4} \text{ mg}} = \frac{8 \text{ mCi}}{10^{-2} \text{ mg}} = \frac{800 \text{ mCi}}{\text{mg}}$$